

Claims

1. Method for separating flat consignments by means of a plurality of successive take-off elements having acceleration stages (1,2), whereby the take-off elements act on one side 5 on the sides of the consignment in the take-off plane, whereby

- the nominal take-off speed of the take-off elements in each acceleration stage (2) is higher than the nominal take-off speed of the take-off elements of the acceleration stage (1) upstream in the direction of transport at any one time,
- the speed of the consignment (3) lying on the take-off elements is measured in the feed region of the respective acceleration stage (1,2) by means of a sensor T1 (5) 10 located on the side of the take-off element,
- as soon as the speed of the consignment (3) lying on the take-off elements, which is measured in the feed region of each acceleration stage (2) by means of the sensor T1 (5) located on the side of the take-off elements, deviates by only a defined low 15 value from the nominal speed of the take-off elements in said acceleration stage (2), the speed of the take-off elements of the upstream acceleration stage(1) in the direction of transport is reduced.

2. Method according to Claim 1, whereby the sensors T1 (5) are located between the 20 acceleration stages (1,2).

3. Method according to Claim 1, whereby the speed of the consignments (3,4) which can be sensed from the side facing away from the take-off elements in the region of the acceleration stages (2) downstream in the direction of transport is additionally measured 25 by means of sensors T2 (6) located on the side facing away from the take-off elements.

4. Method according to Claim 1, whereby the speeds of the take-off elements and of the consignments (3) driven by them are compared with one another in order to determine slippage and, when deviations lying above a defined limit value are exceeded, a service 30 signal is generated.

5. Method according to Claim 3, whereby

- as soon as the speed of the consignments (3) lying on the take-off elements, which is measured between the acceleration stages (1,2) by means of the sensor T1 (5)

located on the side of the take-off elements, deviates by only a defined low value from the nominal speed of the take-off elements of the acceleration stage (2) downstream in the direction of transport at any one time, the speed of the take-off elements of the upstream acceleration stage (1) in the direction of transport is

5 reduced,

- the speed of the consignments (3,4) is measured in the region of each acceleration stage (2) downstream in the direction of transport by means of a sensor T2 (6), which is located on the side facing away from the take-off elements, and as soon as the thus measured speed of the consignments deviates by only a defined low value from the nominal speed of this downstream acceleration stage (2) after the reduction of the speed of the take-off elements in the respective upstream acceleration stage (1) acceleration stage, the speed of the take-off elements of the respective upstream acceleration stage (1) is again increased to its nominal speed, and as soon as the leading edge of a consignment detected by means of the sensor T2 (6) from the downstream acceleration stage (2) is registered as a measured jump in speed to $vA1$, the speed of the take-off elements for the respective upstream acceleration stage (1) is changed to the value 0,
- as soon as the consignment speed measured by the sensor T1 (5) between the two adjacent acceleration stages (1,2) has dropped from the speed of approximately $vA2$ to the value 0, the take-off elements for the respective upstream acceleration stage (1) are accelerated to the nominal take-off speed and
- the distance between the beginning of the respective acceleration stage (2) and the associated sensor T2 (6) and thus the holding point for the leading edge of the following consignment (4) is chosen depending on the difference between the nominal speeds of the respective acceleration stage (2) and the upstream acceleration stage (1) such that the two adjacent consignments (3,4) exhibit a defined distance from one another at the end of the respective acceleration stage (2).

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6. Method according to Claim 1 or 5, whereby as soon as the speed of the consignments (3) lying on the take-off elements, which is measured between the acceleration stages (1,2) by means of the sensor T1 (5) located on the side of the take-off elements, deviates by only a defined low value from the nominal speed of the take-off elements of the acceleration stage (2) downstream in the direction of transport at any one time, the speed of the take-off elements of the upstream acceleration stage (1) in the direction of

transport is reduced to the value 0.

7. Device for separating flat consignments by means of a plurality of successive take-off elements having acceleration stages (1,2), whereby the take-off elements act on one side on the sides of the consignment in the take-off plane, whereby

- 5 - the nominal take-off speed of the take-off elements in each acceleration stage (2) is higher than the nominal take-off speed of the take-off elements of the acceleration stage (1) upstream in the direction of transport at any one time,
- 10 - a sensor T1 (5) for measuring the speed of the consignment (3) lying on the take-off elements is located on the side of the take-off element in the feed region of the respective acceleration stage (1,2), and
- 15 - a control unit is provided which is implemented such that as soon as the speed of the consignment (3) lying on the take-off elements, which is measured in the feed region of each acceleration stage (2) by means of the sensor T1 (5) located on the side of the take-off elements, deviates by only a defined low value from the nominal speed of the take-off elements in said acceleration stage (2), the speed of the take-off elements of the upstream acceleration stage(1) in the direction of transport is reduced.

20 8. Device according to Claim 7, whereby the sensors T1 (5) are located between the acceleration stages (1,2).

25 9. Device according to Claim 7, whereby sensors T2 (6) are additionally located in the region of the acceleration stages (2) downstream in the direction of transport on the side facing away from the take-off elements which measure the speed of the consignments (3,4) that can be sensed from the side facing away from the take-off elements.

30 10. Device according to Claim 7, whereby the sensors T1,2 (5,6) for measuring the consignment speed are implemented as rollers or bands, running on the consignment surfaces, in fixed locations and driving tachogenerators, whereby the rotational speeds or the voltage generated by the tachogenerators serves as a measure of the consignment speed.

11. Device according to Claim 7, whereby controlled powered take-off belts with defined

coefficients of friction are provided as take-off elements.

12. Device according to Claim 11, whereby the take-off elements have controllable vacuum chambers in order to draw the consignments onto the take-off belts.